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DISCRIMINATION AND GENERALIZATION

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Ever the astute observer of and commentator on her professor's biases, Beth wrote in her paper for a graduate class on psychoeducational interventions, "There is nothing but generalization and discrimination." In response to this intelligent parody, I wrote, "Bless you." She was right, of course. At least, she had clearly identified my perspective. When considering social behaviors, nothing should be everywhere, nor are they. There is, afterall, a time and a place for most socially competent behaviors to be performed for optimal efficiency and function for the person on an operant search to maximize pleasure and avoid pain.

If the circumstances of the generalization and discrimination of behavior are relevant for the utility of a person's repertoire in an area such as social competence, then the technologies for accomplishing both generalization and discrimination should be actively pursued. Historically, an understanding of the principles of generalized performance lagged behind the development of knowledge regarding discriminated performance (Stokes & Baer, 1977). Fortunately, there has been a productive increase in the attention given to techniques to promote generalization.

The review article by Chandler, Lubeck, and Fowler (1992) describes and analyzes the structure and usefulness of some of the generalization literature. They examined the research of the past 15 years to consider generalization assessment and programming of preschoolers' social skills. Their analysis of the literature represents both a topographical description of the extant research and an evaluation of functional variables related to success in programming for generalization. This characterization of current practices will be helpful in directing efforts to evaluate procedures experimentally and relate the causative variables to their generalized outcomes. The data base of studies is still small and frequently nonanalytical. Chandler et al. point to some promising areas for further emphasis. Their focus on an assessment of successful studies is particularly welcome. It has always been difficult to understand functional variables when generalization was not observed because there typically is not a clear assessment of the variables responsible for the failure to produce generalization.

The prominence of generalization and discrimination as processes central to behavior analysis is not new and can be readily placed in an operant tradition. Skinner (1938, 1953) was instrumental in advancing the position that the environment is preeminent in understanding the conditions of the development of discriminative performance. His approach emphasizing the probability of the operant was compelling and facilitated the generation of extensive knowledge about behavior and the circumstances of its development and modification. Within this science of human behavior, the technology for accomplishing behavior change should be considered as secondary to the principles of generalization and discrimination. Contingencies of reinforcement and punishment are elegant and parsimonious, yet these operations are merely essential tools by which the generalization and discrimination of behavior are accomplished, and the processes by which the functional variables controlling generalization and discrimination can be made explicit.

To the chagrin of some, Stokes and Baer (1977) proposed a characterization of generalization as an efficient outcome that facilitated widespread change without requiring active intervention across all relevant environmental conditions. This characterization tried to sidestep the traditional definitions, yet it was not intended that description alone would be the best course of action. Surely, science and

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practice are better served if the variables accounting for the occurrence of generalization are made explicit and are experimentally analyzed (Edelstein, 1989; Stokes & Osnes, 1989). Whatever the controversy, it seems one knows generalization topographically when it is seen. We know what diversity we are looking for, and we can agree that the search for functional variables is important. There is value in regarding generalization both as an outcome and as a function of controlling variables.

Thus, generalization may be regarded from two perspectives, one emphasizing behavioral topography and the other emphasizing behavioral function. Both have usefulness and heuristic value. From a topographical perspective, generalization may be considered as a description of relevant goals specifying relevant outcomes. That is, generalization may be used as a term to describe the extent of widespread effects following more focused interventions to accomplish behavior change. Generalized client outcomes may be considered as success in obtaining therapeutic results across persons, settings, behaviors, and time.

From a functional perspective, the analytic assessment of the variables that are causally related to the occurrence of generalization is obviously critical to our understanding of how to accomplish desirable therapeutic outcomes. In this way, functional procedures are experimentally related to the contingencies by which relevant goals are obtained efficiently. The assessment of these functional variables is critical for the scientific understanding of generalization and its processes, more than for the immediate guidance of practice. These assessments do, however, also have great relevance as advances in knowledge are translated into meaningful practice.

A topographical approach, therefore, has bias toward practice, whereas a functional approach has bias toward scientific endeavors. Nevertheless, the more that topographical outcomes can be related to functional variables, the better the discipline and its practitioners are served. Analytic pursuit of the principles of effective generalization and discrimination technologies is an important activity for serious scientists in behavior analysis. To "train and hope" has never been an adequate or defensible position, even if it is descriptive of much of the practice and science of behavior analysis (Stokes & Baer, 1977).

Given that social competence is an area in which generalization and discrimination of performance are essential, we can consider some of the controlling factors for those repertoires. In essence, the goals of social interaction are to engage in behaviors that feel good to the individual. The behaviors constituting an interaction must function effectively for both participants if they are to survive within a socially competent repertoire. The controlling variables must be those consequences that operate naturally and reciprocally within the interaction rather than being influenced by factors extraneous to the interaction (Hake & Olvera, 1978). A reciprocity balance may occur over the longer term rather than moment by moment, but interdependent reciprocal control is ideal for a lasting repertoire of social competence and mutually maintained positive social interaction.

The adaptive function of a person's behavior as it contributes to positive reciprocity in the social arena is a guiding principle for social competence. This position is consistent with Odom and McConnell's (1985) view of social competence as the interpersonal social performance of a child, and with Foster and Ritchey's (1979) description of socially competent behavior as responses "within a given situation . . . which . . . maximize the probability of producing, maintaining, or enhancing positive effects for the interactor" (p. 626). Of course, within dyadic interactions, exchange of both positive and negative consequences occurs. Reciprocity may refer to mutual positive equity, whereas coercion may refer to the exchange of negative and aversive consequences and the effects of those contingencies (Patterson & Reid, 1970). The absence of a socially competent repertoire may be characterized by a dysfunctional combination of reciprocity and coercion within interactions.

Relevant to the provision of interpersonal consequences and the maintenance of a comfortable level of positive interaction is Freud's pleasure principle (1920/1955, 1940/1949). He refers to a person's motivation to seek pleasure and avoid unpleasure (or pain). This position is not inconsistent

with the operant principles of reinforcement and punishment. Freud referred to pleasure and unpleasure as feelings. As such, pleasure and pain may be regarded as the personal dimensions of experience (e.g., the covertly experienced consequences of social interaction). Reinforcement and punishment may be regarded as the scientific concomitant operations of these subjective aspects. It should be noted, however, that a person's report of feelings may not be a reliable indicator of true functional effect. A difficulty in objective assessment does not negate the existence of such personal dimensions. Nevertheless, it may limit the determination of reliable functional relationships between these behaviors and environmental events both inside and outside the skin. A person's behavior may well be influenced by the antecedent and consequent stimuli within the skin. However, the extent of control by internal covert factors is frequently overemphasized in theory and practice. Maintaining a link to the external environmental stimuli is essential to an adequate formulation accounting for behavior development and change. It is most likely, therefore, that any useful account of generalization and discrimination will incorporate and emphasize both a person's history and the current functional interactions with the external environment that affect the current status and performance of the individual (Bijou & Baer, 1978).

Social competence represents an ideal area for analyzing the occurrence of generalized and discriminated behavior. The absence of the topography of social competence in some circumstances, however, does not necessarily indicate a serious concern. So is my personal perspective. A friend of mine, who went to primary and high school as well as Uni with me in Perth, told me many years later that I was very introverted as a child. To consider the relevance of this to possible maladaptive performance, I asked one of my recent classes to complete an historical assessment of my repertoire. The conclusion, generally, was that I was somewhat withdrawn but that this seemed to be an issue of choice, not skill deficit. I displayed a discriminated performance with regard to level of interpersonal interactions, most notably at school. The fact is, I was comfortable as an observer, but there was greater diversity in my repertoire when a more comprehensive and broader assessment was conducted.

Some social behaviors are best and competently displayed in narrowly defined circumstances, and some are better when shown over a widely diverse set of conditions. The review by Chandler et al. (1992) represents an assessment of current practices in research on generalization and, therefore, its contraposition—discrimination. Effective programs will develop a careful or perhaps strategic balance between the two of these for each class of behaviors. There is a generalization–discrimination continuum along which a class of behaviors may be placed for optimal utility and comfort to the person on an operant search to maximize pleasure and avoid pain. The outcome of these events is assessed technically and functionally through the operations of reinforcement and punishment (Skinner, 1953). Of course, it is useful here to recall that generalization and discrimination of performance occur within various classes of environmental antecedent and consequent stimuli and classes of responses that do not need to be identical from occasion to occasion (Edelstein, 1989; Keller & Schoenfeld, 1950).

There is no question that a better understanding of the function and topography of generalized and discriminated performance will advance science and practice in behavior analysis. These issues are paramount for a science of human behavior. There is a time and place for most behavior repertoires to be performed adaptively on a generalization–discrimination continuum. The area of social competence is an ideal candidate for research to understand these issues that have relevance for socially important behavioral development and change.

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